USAWC STRATEGY RESEARCH PROJECT

AIRPOWER COMMAND AND CONTROL: EVOLUTION OF THE AIR AND SPACE OPERATIONS CENTER AS A WEAPON SYSTEM

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ABSTRACT

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The primary purpose of this paper is to analyze the current direction of the AF Chief of Staff (CSAF) on the legitimacy of the AOC as a weapon system. The first step in this analysis process is to look at the evolution of the AOC and current construct as directed by the CSAF. The manning and training for the AOC is the focus of this research. Additionally, this paper will address any issues or concerns in the development of the AOC as a weapon system. Finally, the analysis will provide an overall assessment and recommendation to determine if the AOC as a weapon system meets the demands of a capabilities-based approach in the 21st century.

TABLE OF CONTENTS

LIST OF TABLES

AIRPOWER COMMAND AND CONTROL: EVOLUTION OF THE AIR AND SPACE OPERATIONS CENTER AS A WEAPON SYSTEM

If you don't control it, you can't command it. And if we don't, somebody else will.

—General Hal Hornburg

INTRODUCTION

The National Security Strategy (NSS) reflects the nation's values and interests.[1] President George W. Bush has outlined eight key elements within NSS. The eighth element directs the transformation of America's national security institutions to meet emerging challenges and opportunities.[2] Today, the United States (US) military is facing decreasing budgets, asymmetric threats, increased operations tempo, advances in technology for friend and foe, and the dawn of the Information Age while still required to maintain the ability to operate across the full military spectrum. The Air Force (AF) is meeting this challenge through the transformation process. The AF defines transformation as a process by which the military achieves and maintains advantage through changes in operational concepts, organizational structure, and/or technologies that significantly improve warfighting capabilities or ability to meet the demand of a changing security environment.[3]

One key strategic tenet of the Department of Defense's Quadrennial Defense Review is the development of a capabilities-based approach.[4] A capabilities-based approach focuses more on how the US can defeat a broad array of capabilities that any adversary may employ rather than who the adversaries are and where they may engage joint forces or US interests.[5] The capabilities-based approach for the USAF requires a command and control (C2) system that can maximize the employment of air and space power capabilities at any place, at any time. The Air Operations Center (AOC) is the C2 system for the USAF. The AOC is the aerospace operations planning and execution focal point for the Joint Task Force and is where centralized planning, direction, control, and coordination of aerospace operations occur for which the Commander Air Forces (COMAFFOR)/Joint Force Air Component Commander (JFACC) has Operational (OPCON) and/or Tactical Control (TACON) of forces provided to him to achieve the Joint Force Commander's (JFC's) objectives.[6]

The primary purpose of this paper is to analyze the current direction of the AF Chief of Staff (CSAF) on the legitimacy of the AOC as a weapon system. The first step in this analysis process is to look at the evolution of the AOC and current construct as directed by the CSAF. The manning and training for the AOC is the focus of this research. Additionally, this paper will address any issues or concerns in the development of the AOC as a weapon system. Finally,

the analysis will provide an overall assessment and recommendation to determine if the AOC, as a weapon system, meets the demands of a capabilities-based approach in the 21st century.

BACKGROUND

Joint Publication 1-02 defines a command and control system as the "facilities, equipment, communications, procedures, and personnel essential to a commander for planning, directing, and controlling operations of assigned forces pursuant to the missions assigned." An USAF C2 weapon system includes; sensors, data processors, decision tools, operators, maintainers, and the interconnecting communications to enable commanders to conduct operations with unity of command and effort.[7] To meet the demand for C2 of air and space forces the USAF has developed the AOC. This has been an evolutionary process over the past sixty years. This section will address the historical path leading to the current AOC structure, the current AOC construct, and USAF guidance towards developing the AOC into a weapon system.

HISTORICAL PERSPECTIVES OF COMMAND AND CONTROL

The ability to command and control air and space forces has an origin dating back to the Second World War (WWII). Supreme Allied Commander, General Dwight D. Eisenhower, was instrumental in the development of command and control of air forces. The Northwest African Campaign began initially with air assets assigned to ground commanders for employment. This mindset was evident in the Army Doctrine of 1942. Army Field Manual 31-35, *Aviation in Support of Ground Forces* (April 9, 1942), stipulated that each theater of war should have an air support command to assist the ground forces. During the initial stages of OPERATION Torch air assets were limited to providing localized air superiority and support to ground forces. Air Chief Marshal Sir Arthur W. Tedder, the senior officer of the Royal Air Force, argued this was a poor use of air power and called for the organization of air assets under a single commander.[8]

General Eisenhower realized the need to organize all air forces under a single commander--the Commander Allied Air Force. The Allied Air Force was activated on January 5, 1943.[9] In July 1943, Army Field Manual 100-20 addressed the issue of air power: "The inherent flexibility of air power is its greatest asset. This flexibility make it possible to employ the whole weight of the available air power against selected areas in turn; such concentrated use of the air striking force is a battle winning factor of the first importance. Control of available air power must be centralized and command must be exercised through the AF Commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited."[10] Furthermore, WWII is the genesis of the JFACC (in today's terms). Prior to the invasion of Europe through

Italy, General Eisenhower established the Mediterranean Air Command under Air Chief Marshal Tedder for command and control of the entire Mediterranean area. This evolution continued for the tactical air forces in the European Campaign. The Allied Expeditionary Air Forces were commanded by a single airman consisting of 9th AF, Royal Air Force (RAF) 2 Tactical Air Force, and the Air Defense Force Great Britain supporting the Allied ground offensive. However, strategic bombing from US and RAF bombers were not consolidated with the tactical air forces. The C2 supporting the Allied ground offensive resided in Tactical Control Centers with air liaison officers attached to Army, Corps, Division, and Brigade headquarters.

Four key air employment tenets surfaced from the lessons learned in WWII: strategic bombing, air superiority, air interdiction, and close air support. WWII lessons learned coupled with the birth of the USAF in September 1947 substantiated the claim that air assets were a unique capability and controlled by an aviator. Unfortunately, the dropping of the atomic bomb and post-war threat of nuclear weapons resulted in AF parochialisms of a strategic bomber force with little emphasis on tactical air power. During the Korean War, all air assets were under the command and control of the Far East Air Forces (FEAF), commanded by Lt General George E. Stratemeyer. FEAF was troubled early in the campaign due to aircraft constantly being diverted to support the army. Due to limited tactical assets, strategic bombers were operating in a close air support role. Target selection was erratic and aircraft were directed to targets of little value. General Stratemeyer remedied this by creating the Far East Command Target Selection Committee (similar to today's Joint Targeting Coordination Board) consisting of senior and appropriately experienced officers from all services.[11] However, the USAF found the coordination effort with the Navy and Marines unsatisfactory, and worked with limited success to centralize command of all air forces in-theater.[12]

The WWII and Korea observed lessons appear to have been ignored prior to and during the Vietnam War. Following the Korean War, the USAF developed the Theater Air Control System (TACS) for the C2 of air assets. The primary elements of TACS consisted of the Tactical Air Control Center (TACC), Direct Air Support Center (DASC), and airborne platforms. In all, three different autonomous TACC C2 nodes were employed: two located near Saigon and one located in Thailand. Each TACC was assigned a different area of responsibility and mission type. One TACC was responsible for South Vietnam with four subordinate DASCs embedded with Army Corps Headquarters (today's equivalent of the Air Support Operations Center). The remaining two TACCs were responsible for different sectors in North Vietnam. To complicate things even more, Strategic Air Command controlled B-52s and all naval air assets were operating under their own equivalent of TACS.[13] The absence of a single air commander

produced chaos during numerous operations like Rolling Thunder and OPERATION Barrel Roll. AF and Navy air forces controlled different sectors called route packages and could only service targets after coordinating with the owning service.[14] The wisdom of FM 100-20, centralized control of air assets, to this point, was never achieved.

Throughout the 1970s and 1980s, the USAF worked to remedy the decentralized C2 seen in previous wars. The USAF remedied this situation by developing key tenets of airpower. The cornerstone of these tenets is centralized control and decentralized execution. The TACS remains in place today and is part of the overall JFC's C2 structure known as the Theater Air Ground System. The TACC evolved into the AOC and gained prominence during OPERATION Desert Storm. The air and space power tenet of centralized control and decentralized execution was instrumental in the generation of 2,000-3,000 sorties a day during the first Gulf War. The JFC's intent for employment of airpower was centrally planned, distributed in the form of an air tasking order (ATO), and executed across an entire theater battlespace.[15] Moreover, all air assets were placed under the command of a single airman—the JFACC. The JFACC synchronized 2,400 coalition aircraft over 20 airfields and 6 naval carriers.[16] This C2 structure is now the cornerstone of airpower employment as illustrated during Bosnia and Kosovo, and the on-going support to OPERATION Enduring Freedom and OPERATION Iraqi Freedom.

CURRENT AOC CONSTRUCT/LOCATIONS

The AOC is a unique capability the USAF provides the Combatant Commanders. The official name of the AOC is the Air and Space Operations Center—AN/USQ-163 Falconer Weapon System. The AOC is the senior C2 element of the USAF TACS, and provides three essential elements for command: a commander, a staff, and a C2 mechanism. The TACS is under OPCON of the COMAFFOR. Within the AOC are five divisions: Strategy, Combat Plans, Combat Operations, Intelligence, Surveillance, and Reconnaissance (ISR), and Air Mobility. If the COMAFFOR is not the JFACC, the AOC ***is not attached*** to another Service component.[17] (Emphasis added) However, this does not mean that AOC personnel might not serve with a Naval/Marine JFACC.

The USAF currently maintains AOCs and augmentee support as indicated in table 1. Two of the Falconer AOCs are located at fixed facilities with personnel operating for specific tour

FALCONER AOCS		
UNIT	LOCATION	AOC TYPE
Hardened TACC	Osan Air Base, Korea	Fixed
9th Air Force Deployed	Al Udeid Air Base, Qatar	Fixed
12th Air Force	Davis Monthan AFB, Az	Deployable
32nd Air Ops Group	Ramstein Air Base, Germany	Deployable
502nd Air Ops Group	Hickam AFB, Hi	Deployable
FUNCTIONAL AOCS		
UNIT	LOCATION	AOC TYPE
1st Air Force	Tyndall AFB, Fl	Homeland Defense
11th Air Force	Elmendorf AFB, Ak	Homeland Defense
Cheyenne Mtn Ops Center	Cheyenne Mountain, Co	Homeland Defense
14th Air Force	Vandenberg, Ca	Space
Theater Airlift Control Center	Scott AFB, Il	Mobility/Airlift/Tnkr
DEVELOPMENT, INNOVATION, AND TRAINING CENTERS		
UNIT	LOCATION	AOC TYPE
C2 Trng and Innovation Grp	Hurlburt AFB, Fl	Training
Combined AOC (CAOC-N)	Nellis AFB, Nv	Training
Combined AOC (CAOC-T)	Barksdale AFB, La	Trng/Transformation
Combined AOC (CAOC-X)	Langley AFB, Va	Experimental
MANNING FORCE (MANFOR) UNITS		
112th Air Control Squadron (CENTAF)	State College, Pa	AUGMENTATION
152nd Air Ops Group (USAFE)	Syracuse, NY	AUGMENTATION
701st Cmbt Ops Sqd (PACAF)	March AFB, Ca	AUGMENTATION
8th Air Force (CENTAF)	Barksdale AFB, La	AUGMENTATION
710th Cmbt Ops Squadron	Langley AFB, Va	AUGMENTATION
157th Air Ops Group (PACAF)	St. Louis, Mo	AUGMENTATION

TABLE 1. CURRENT AOC STRUCTURE AND LOCATIONS

lengths. The remaining Falconer AOCs are deployable and consist of personnel and equipment to meet contingency tasking. The functional AOCs operate at facilities within the CONUS and conduct missions as indicated in table 1. The development, innovation, and training centers serve to train personnel and test and evaluate new equipment and processes. The manning force AOCs provides an augmentation pool of personnel to supplement the Falconer and functional AOCs. Additionally, the USAF provides AOC personnel to ten NATO Combined AOCs (CAOCs) in Europe and the Middle East. Two key CAOCs are located in Eskisehir AFD (CAOC Six), Turkey, which was supporting OPERATION Northern Watch and in Poggio Renatico (CAOC Five), Italy, which supports the Balkan region.

CURRENT AOC GUIDANCE

Some of the key lessons learned from the Gulf War, Bosnia, OPERATION Just Cause, and Kosovo were the inconsistencies associated with operating procedures, personnel, and C2 system integration. In September 2000, the CSAF, General Michael E. Ryan, declared the AOC a weapon system. The current CSAF, General John P. Jumper, in an AOC status briefing on 26 February 2002 emphasized the importance of reaching a standardized and sustainable AOC weapon system.

The CSAF designated the AF Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC) Commander the lead agent for the AOC. The center will manage the AOC weapon system, develop, coordinate, and implement the AOC roadmap with Major Commands (MAJCOMs), and develop the appropriate programmatic submission for USAF corporate review. The roadmap will identify modernization efforts, sustainment requirements, and proposed fielding for all AOCs and related sites.[18]

AOC AS A WEAPONS SYSTEM

> Warfighting integration is all about providing integrated C4ISR that provides commanders and staffs with decision quality information to control forces to achieve desired effects. As our battle management command, control, communications, computers, and information concepts are the central nervous system of the future C2 Constellation; the AOC weapon system is the brain. Our Warfighting integration motto is INTEGRATE, INNOVATE, DOMINATE and our AOC weapon system is absolutely critical to this motto and future campaign success. I'm very pleased to endorse the first AOC weapon system STATREP (Status Report).
>
> —Lt Gen Leslie Kenne, AF/XI Warfighter Integration

DEFINING A WEAPON SYSTEM

The CSAF declaring the AOC as a weapon system has raised some eyebrows among the traditional weapon systems in the operations community. Traditionally, the USAF thinks of a weapon system as a platform that can deliver fires whether air-to-air missiles or precision-guided munitions. Moreover, traditional weapon systems operate at the tactical level. The F-15E Strike Eagle is a perfect example of a traditional weapon system. The F-15E weapon system receives support and employment from USAF personnel who receive education and training on that system and obtain an AF Specialty Code (AFSC). The personnel assigned a specific AFSC must attend formal training course. This course takes place at a formal training unit (FTU). The FTU provides aircrew training in an initial qualification training (IQT) course. Following the FTU, aircrew personnel are assigned to a combat squadron for mission qualification training (MQT), which provides training to declare them combat mission ready (CMR). Once CMR, aircrew perform continuation training (CT) to hone and perfect their warfighting skills. F-15E enlisted maintenance personnel progress in a similar fashion. Maintenance personnel attend a formal technical school and complete on-the-job training (OJT) to obtain a given skill level needed to maintain the weapon system.

The AOC is a unique capability that provides the JFACC with a C2 structure to for centralized planning, direction, control, and coordination of air and space power to meet the objectives of the JFC. The AOC is an operational level C2 system that, in the past, was unique to different commands from the standpoint of non-standardized equipment, operating procedures, and training. As the AF transforms to meet the challenges of the 21 st century, it is important to leverage all areas of doctrine, organization, training, materiel, leadership, people, and facilities to achieve the optimum capability. The USAF working to meet this challenge is declaring the AOC as a weapon system. The biggest challenges facing the AOC as a weapon system are in the areas of standardized equipment, procedures, manning and training. USAF and other Service personnel from a variety of weapon systems and support AFSCs man the AOC. The training for AOC personnel is an addition to normal AFSC training. Personnel operate at an AOC for a single tour or provide augmentation during contingencies or exercises. Prior to declaring the AOC a weapon system, personnel usually were assigned to an AOC with little or no training and had to learn their skills by some selected courses or OJT. Today, the USAF is developing an AOC system-training plan to meet the educational and training needs of AOC personnel known as AOC University (AOCU).[19] The goal of the AOCU is to provide a computer-based virtual training system to allow training until unit-based training suites are available.

The designation of the AOC as a weapon system could infer the assignment of a new AFSC. AF Instruction 36-2101, paragraph 3.9, states changes in mission, weapon system, or equipment may require changes to authorized AFSCs and reevaluation of training and individual qualifications. The question to ask is whether the AOC is truly a weapon system in the traditional sense requiring specific training and assignment of a new AFSC. One could argue that the complexity associated with C2 operations demands individuals be trained and assigned an AFSC. Currently, the personnel assigned to an AOC do not have a specific AOC AFSC. Instead, the AF has determined that AOC personnel will receive a special experience identifier (SEI). SEIs identify special experience and training not otherwise identified within the personnel data system (PDS). SEIs compliment the assignment process, but are not a substitute for AFSCs. SEIs rapidly identify an already experienced resource to meet unique circumstances, contingency requirements, or management needs.[20] SEIs track information that could otherwise be lost.

The AF has two SEI codes for AOC personnel: 9A for officers and 901 for enlisted personnel. The assignment of the SEI 9A code requires:

- Either recommendation of supervisor or commander and certification as CMR according to the provision of AF Instruction (AFI) 13-1, Volume I;
- Or completion of any contingency operations or air and space expeditionary force (AEF) temporary duty tour at an AOC (combined or joint) of at least 90 days;
- Or 6 months of experience while assigned to an AOC entity (combined or joint);
- Or participation in a large scale theater air operations or exercises such as Blue Flag, Roving Sands, or Joint Experimental Force Exercise (JEFX).[21]

The assignment of the SEI 901 code requires:

- Either completion of ACC Joint Aerospace Command and Control Course, 3 consecutive months of experience in AOC assignments, mission ready certification, and supervisor's or commander's recommendation;
- Or 6 consecutive months of experience in AOC assignments, mission ready certification, and supervisor's or commander's recommendation.[22]

MANNING

The operating of an AOC incorporates equipment and cadre personnel from a Numbered Air Force (NAF)/component staff. The basis for AOC staffing is on a cadre or core concept with personnel selected for their air operations, space operations, communications, intelligence, and battle management expertise and knowledge of C2 concepts and procedures. Additional

personnel, usually from all Services of the coalition, who are knowledgeable in current capabilities and tactics of each aircraft; ISR platforms; space resources and weapon systems augment this cadre. Each functional commander supplies liaison officers (LNOs) to serve in the AOC to represent the interests of their commanders.[23]

The AF has three primary AOC manning initiatives: staff the AOC as a weapon system, modernize to reduce manning requirements and standardize new AOC organizational structure.[24] Critical to meet these challenges is the development of unit type codes (UTCs). UTCs are the building blocks for equipment and personnel management to supply combatant commanders with necessary forces. Upon Combatant Commander request for forces, the Air and Space Expeditionary Force Center (AEFC) plans, configures, schedules and assesses aerospace expeditionary forces enabling the delivery of versatile and responsive aerospace power while providing AF personnel stability and predictability. [25]

To provide the Combatant Commander with a functional AOC the USAF has developed two UTCs: 7FVX1 and 7FVX5. The 7FVX1 AOC UTC (termed core AOC UTC) consists of equipment and 265 personnel (125 officers with 52% rated flyers) providing a core capability. The 7FVX1 UTC can provide a 24-hour operation for 30 days, directing approximately 300 missions per day. The core AOC UTC is a stand-alone package but requires base support for such things as billeting, dining, force protection, and external communications. The 7FVX5 AOC UTC is a 125 personnel (62 officers with 55% rated flyers) only UTC providing augmentation for the core AOC UTCs.

The staffing for the AOC consists of four categories: senior leadership, process owners, core cadre, and augmentees. Senior leadership includes the Commander and his senior staff who assist him in commanding aerospace power and interacting at the executive level with joint and coalition partners. This includes the Deputy JFACC, AOC Director, Director of Mobility Forces (DIRMOBFOR), and senior LNOs dispatched to the various headquarters as well as selected strategy planners. Process owners are the true foundation of the AOC weapon system. They lead the AOC's divisions, teams, and specialized support groups. The core cadre is permanent party personnel assigned to the AOC. The core cadre is the group most responsible for supporting the process owners in getting the AOC's job accomplished. This group includes operators, planners, intelligence, and support officers and technicians. The core cadre provides essential worker-level continuity and instructor capability for most of the newly assigned entry-level personnel and augmentees. Augmentees generally fall into one of two groups: dedicated and non-dedicated. Dedicated augmentees (UTC 7FVX5 personnel) provide dependable, professional support, seamlessly joining the AOC team and quickly melding with

the core cadre. However, the unique demands of AEF rotations as well as the broad spectrum of joint and coalition task forces will require the capability to integrate joint and allied/coalition personnel, unit representatives, subject matter experts, and LNOs who may not have comprehensive training opportunities (non-dedicated).[26]

TRAINING

Training qualified operators to augment C2 operations presents a significant challenge. Ensuring standardized C2 training across the total force lays a sound foundation and develops the skills necessary for the employment of C2 systems.[27] The first challenge is identifying and training C2 personnel. Full employment of the weapon system remains hampered by a lack of trained personnel. In addition, augmentation personnel are required to staff AOCs, and come with varying amounts of AOC experience; the burden of training these augmentees resides with the augmented unit.[28] Currently, the rate of untrained personnel assignments to current or contingency AOCs is approximately 60%.[29] The goal of the AOC as a weapon system and formulation of UTCs is to assist this process. The goal of the AF is to staff at 100% the AOCs listed in table 1. The development of C2 trained personnel will be consistent with current weapon system FTUs. AOC FTU began conducting training in late 2003 at the Command and Control Warrior School (C2WS) located at Hurlburt AFB, Florida.

All senior leadership, process owners, core cadre, and dedicated augmentee personnel will complete position/process specific IQT and MQT. CT will ensure the proficiency for AOC personnel. Upon completion of training, personnel receive periodic evaluation to validate positional proficiency. Personnel who move from one duty position to another are re-trained in the new duty position. Selected personnel will receive advanced and/or senior leader training. Training will include both academic and/or positional training requirements. Each AOC will have an individual responsible for monitoring training of all assigned personnel.

The FTU conducts the IQT training. The FTU teaches selected individuals broad C2 concepts and procedures. The FTU structures course taught for a specific function in the AOC such as Combat Operations, Combat Plans, ISR, Strategy, Air Mobility, or system administration. The IQT courses provide each individual with the foundation for standardized knowledge, operating procedures, and equipment utilization skills necessary to become mission ready. The goal is for personnel assigned to an AOC to complete training enroute to their new duty location or shortly after arrival. After completion of IQT, each individual receives an SEI code that the PDS monitors. This code will remain with the individual, unless rescinded, for the remainder of their career. Recall, currently the USAF has not developed guidelines for

rescinding the SEI code. Once an individual transfers out of an AOC unit, the AEFC tracks the SEI code to task selected individuals for AOC duties in future AEF rotations. The first AOC FTU class graduated from the C2WS in February 2004. Completion of this course does not produce a mission ready certification.

Upon completion of AOC FTU, individuals return to their selected units for MQT. MQT requirements are contained in AFI 13-109, Volume 1. Each AOC unit conducts MQT to provide detailed training on specific AOC position processes, functions, and mission knowledge. Completion of MQT and either contingency or exercise participation results in the award of mission ready status. The tracking of mission ready status is a unit function and the award of the SEI code from the FTU does not equate to mission ready status. This is an important point from a scheduling standpoint for AEF rotations. The AEFC in coordination with the unit Commanders must insure tasked individuals have completed MQT and designated CMR.

CT is critical to maintaining proficiency after CMR status. CT provides individuals with the essential training to maintain combat readiness and integration of other team members to insure the AOC can provide the warfighter with the best use of air and space power. CT builds on a team concept by participation in exercises such as Blue Flag, Red Flag, Roving Sands, Joint Experimental Force Exercises, and Ulchi Focus Lens. Simulation is essential to functional area team building, development of internal processes, and ultimately AOC horizontal and vertical integration. Standardized training provides for commonality of training, support individual skills, and facilitates team building and process integration. Simulation and distributed computer based training that run on AOC system of record equipment are keys to effective training.[30] The AOCU is responsible for the computer-based training.

Process owners provide the functional capability of the AOC. These individuals complete advanced level training; this produces key leaders in each AOC division. These individuals come from the cadre after completion of IQT, MQT, and CT and head such key positions as Combat Operations Chief, Combat Plans Chief, Master Air Attack Plan Chief, Guidance Apportionment Targeting Chief, Strategy Chief, and ATO Production Chief. Graduates can assume instructor/supervisory level positions within an AOC. Training will provide advanced level instruction to experienced personnel on AOC processes and employment of aerospace forces at the operational level of war. Advanced training produces mastery of core processes and horizontally and vertically integrates those processes across the spectrum of the AOC.[31]

KEY ISSUES/CONCERNS

The ability to maximize, the full capability of air and space power resides in the AOC becoming weapon system. However, this paper professes the USAF must address several key issues/concerns to be fully combat ready. There are three key issues with respect to SEIs. The first key issue is how to track individuals who have attained an SEI code prior to current FTU training. As previously stated, personnel are give an SEI code of 9A (officers) or 901 (enlisted) upon completion of FTU. These individual codes can be matched to specific FTU courses to determine which functional area they are trained. However, individual SEI codes given prior to FTU training are generic and do not correspond to specific functional areas.

The second key issue is there are no procedures or guidelines established to determine when an individual is no longer mission ready or requires additional training. Additionally, no sound guidelines exist for the removal or suspension of an SEI based on experience level. For example, if an aircrew member were assigned to an AOC from 1997-1998, they would be granted an SEI. Following this assignment, they would still maintain the SEI even though they remained outside the AOC environment for an extended period. The complexity and rapid modernization of the AOC could result in this individual being unqualified for AOC duty. However, with the current system, the unqualified individual may resume duties in an AOC based on the SEI. Normally personnel are assigned to an AOC for a single tour (1 year for a remote assignment and 2-3 years for CONUS/Overseas assignment) or during an AEF rotation or contingency operation (normally 90-179 days).

Traditional weapon systems have a limitation associated with their training programs. For example, if an F-15E aircrew member has been out to the cockpit for greater than one year they are required to attend either a refresher course or “B” course. A “B” course is a full IQT program designed for new aircrew member or an individual not in the weapon system for greater than three years. The final key SEI issue is the inability to assess qualifications based upon the SEI code itself. At first glance, an individual with an SEI code has AOC experience and can perform AOC duties. However, the SEI code is too generic to determine whether they have qualifications that are specific to a division in the AOC. This generic code will require AEFC personnel to assess each individual and determine which specific FTU course they completed prior to assignment to AEF rotations.

Another concern affects the overall strength of AOC manning. As previously stated, the core AOC UTC can direct 300 sorties per day. The AOC strength for Desert Storm and Operation IRAQI FREEDOM ranged from 1200 – 2000 personnel to generate 1500-2500 sorties. The USAF, with augmentation from joint/coalition personnel, was able to meet the

manning requirement for these operations. The Secretary of Defense states that the Department of Defense must swiftly defeat the efforts of two major adversaries simultaneously. Specifically, does the AF have enough personnel trained to maintain the current and proposed AOC UTCs and provide enough non-dedicated personnel to meet more than one contingency? Initial research concludes that this would be a monumental task given current staffing and training capability.

The most critical area for AOC manning is the availability of rated officers to fill both the 7FVX1 and 7FVX5 UTCs. The AOC weapon system is highly dependent upon rated officers to insure effective air and space power employment. Rated officers constitute approximately 50% of the officer billets in the AOC UTCs. Overall requirements for rated officers for Headquarter level staff positions exceed current availability. The USAF groups AOC manning with Headquarters level staff positions. The shortage stems from pilot retention and pilot production. Headquarters staff level manning has been critical for several years operating around 58%. Today, this number is around 76% due to navigators backfilling pilot positions. Unfortunately, 48% of the current navigator force will be eligible to retire within the next four years.[32]

The next area of concern relates to MQT and CT training. According to Mr. Byron Edge, AFC2ISR, the office of the Secretary of AF for acquisitions (SAF/AQ) has delayed the procurement of individual training suites for the selected AOC units until FY07.[33] This is of major concern in the development of mission ready AOC personnel. These training suites are essential to MQT upgrades and CT. The short-term fix is computer based training provided by AOCU and simulation exercises conducted during Blue Flags, Red Flags, JEFXs, etc. or OJT training during actual contingencies. The major issue with this approach is that personnel, if tasked to participate in a real-world contingency, are accomplishing training in a combat environment. This is taboo is the flying world. Aircrew will never conduct combat missions without being fully mission ready. Therefore, if the AOC is truly a weapon system then only trained and mission ready personnel should participate.

The final issue revolves around continuity. As previously stated, personnel normally perform AOC operations for a single tour or contingency tasking. The problem is these individuals return to their primary AFSC positions and may never again perform AOC duties. This results from permanent change of station, retirement, and normal separations. Active duty units feel the affects more than the Air National Guard (ANG) or AF Reserve (AFR) units do. ANG and AFR unit personnel remain in their respective units for extended periods, and in many cases provide continuity and experience within theater AOCs.

RECOMMENDATION

The primary reason for developing the AOC as a weapon system is to provide JFC with a cadre of CMR AOC C2 warriors capable of supporting any contingency. The USAF has the best C2 warriors and meets all mission tasks. However, this paper will conclude by providing recommendations to improve this capability by addressing the key issues/concerns and substantiate the AOC as a weapon system.

There are two options available to address the SEIs. The first option allows AOC personnel to receive a specific AFSC upon completion of training. This would allow personnel to remain with the weapon system throughout their career. Unfortunately, this option will fail in the wake of rated officer manning. By permanently assigning an AFSC, this will further reduce the already strained, manning required for combat aircraft and Headquarters staff positions. The USAF did look at this possibility but concluded that this was not a viable option and opted for the assignment of the SEI. The only viable option is the SEI but requires modification to improve accountability and personnel qualification tracking. The SEI code should reflect actual personnel qualifications and this in turn would aid the AEFC in selecting personnel to meet AEF rotations. Table 2 contains the AOC FTU courses and proposed SEI codes.

The question remains how to deal with the rescinding of an SEI and how to track those personnel with SEIs prior to opening of the FTU. The AOC weapon system should follow the same guidelines in use by aircraft weapon systems. If an individual leaves the AOC and returns for greater than one year but returns prior to three years, they should attend a refresher course conducted by the FTU. Individuals working outside the AOC for greater than three years must attend the FTU IQT. Additionally, if an individual is required to re-train outside their primary SEI then they must complete the IQT for the new position. For those individuals who currently have an SEI (prior to the new FTU process) should receive a new SEI for their current qualifications providing they meet the time constants.

The concern for rated manning has two potential actions, which may alleviate the problem. First, the USAF should continue to seek retired or separate rated officers and offer a contract to return to active duty and fill AOC rated officer billets. Secondly, the active duty UTCs currently contains only USAF personnel. A modification of the UTCs to allow joint billets would help reduce the rated manning issue. The AOC has never employed C2 of air and space power assets in isolation. During contingencies, the AOC manning consists of USAF and joint positions. This course of action will provide joint integration and prepare AOC personnel to train the way we fight—jointly.

OFFICER		
COURSE DESCRIPTION	CURRENT SEI	PROPOSED SEI
AOC IQT, Offensive Course	9A	9OC
AOC IQT, Defensive Course	9A	9DC
AOC IQT, ISR Officers Course	9A	9ISRC
AOC IQT, Airspace Course	9A	9AC
AOC IQT, Interface Control Officer Course	9A	9ICOC
AOC IQT, Air Mobility Operations Course	9A	9AMOC
AOC IQT, Communications Course	9A	9CC
AOC IQT, Personnel Recovery Course	9A	9PRC
AOC IQT, Space Operations Course	9A	9SOC
AOC IQT, Strategy Operations Course	9A	9SC
Joint Air Tasking Order Production Course	9A	9ATOC
ENLISTED		
COURSE DESCRIPTION	CURRENT SEI	PROPOSED SEI
Joint TBMCS System Administrator Course	901	901TSAC
AOC IQT, Networks Administrator Course	901	901NAC
AOC IQT, Air Mobility Technician Course	901	901AMTC
AOC IQT, ISR Technician Course	901	901ISRTC
AOC IQT, Plans/Ops Technician Course	901	901POTC
AOC IQT, Interface Control Tech Course	901	901ICTC
AOC IQT, System Administrator Course	901	901SAC

TABLE 2. AOC FTU COURSES AND SEIS

The way USAF employs a weapon system requires the same standards. The AOC is no exception. The AOC weapon system personnel must receive the equipment necessary to

properly train and become CMR. The USAF must re-evaluate the decision to delay the procurement of training suites. These are essential to personnel upgrade and continuation training. In unattainable, the USAF will require more training slots during major exercises. Currently, a limited amount of training slots exist thus requiring more exercises to meet the demand. Unfortunately, the current operations tempo will have a significant impact on the potential to increase the number of exercises available for training.

The final recommendation concerns continuity of AOC personnel. As previously stated, active duty personnel normally complete a single assignment to an AOC thus decreasing the expertise available to meet contingency requirements. Conversely, the ANG AOC UTCs do not have this limitation. ANG AOCs have personnel remaining in the same weapon system for years. This expertise provides CMR AOC personnel ready to meet contingency tasking with little to no additional training. Albeit not popular, the USAF could re-task one ANG UTC as a core 7FVX1. This would provide continuity and meet the challenges of two swiftly defeat requirements.

The demand of the 21st century requires a capabilities-based approach for the all services. The employment of air and space capabilities is dependent upon an effective and efficient C2 mechanism. The USAF is transforming our force to meet future challenges. This paper concludes that the USAF declaring the AOC as a weapon system meets transformation requirements. As with any new system, there exist barriers and potential areas for improvement. This paper agrees with the CSAF's decision to declare the AOC a weapon system and suggest consideration be given to the proposals to alleviate key issues and concern.

WORD COUNT= 5840

ENDNOTES

[1] George W. Bush, *The National Security Strategy of the United States of America* (Washington, D. C.: The White House, September 2002), 2.

[2] Ibid., 29.

[3] Department of the Air Force, *The USAF Transformation Flight Plan FY03-07* (Washington, D.C., U.S. Department of the Air Force, September 2002), iv.

[4] Department of Defense, *Quadrennial Defense Review Report* (Washington, D.C.: U.S. Department of Defense, September 30, 2001), 13.

[5] NSS., 29.

[6] Department of the Air Force, *Organization and Employment of Aerospace Power*, Air Force Doctrine Document 2 (Washington, D.C., U.S. Department of the Air Force, 17 February 2000), 71.

[7] Department of the Air Force, *Command and Control*, Air Force Doctrine Document 2-8 (Washington, D.C., U.S. Department of the Air Force, 16 February 2001), 13.

[8] Eduard Mark, *Aerial Interdiction in Three Wars* (Washington, D.C.: Center for Air Force History, 1994), 30.

[9] Ibid., 32.

[10] Department of the Army, *Command and Employment of Air Power*, Army Field Manual 100-20 (Washington, D.C., U.S. Department of the Army, 1943), 1.

[11] Mark, 274.

[12] J. Taylor Sink, *Rethinking the Air Operations Center: Air Force Command and Control in Conventional War* (Maxwell AFB, AL, Air University, September 1994), 1.

[13] Ibid., 13-17.

[14] Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (New York, NY, The Free Press, 1989), 128-130.

[15] Department of the Air Force, *Air Force Basic Doctrine*, Air Force Doctrine Document 1 (Washington, D.C., U.S. Department of the Air Force, September 1997), 23.

[16] Williamson Murray, *Air War in the Persian Gulf*, (Baltimore, Md.: The Nautical & Aviation Publishing Company of America, 1995), 41.

[17] Commander, Headquarters Air Force Doctrine Center, “Doctrine Watch #19: The COMAFFOR…Commander of Air Force Forces,” 13 December 2002; available from <https://afdc.maxwell.af.mil\doctrine\DoctrineWatch19.htm >; Internet; accessed 11 November 2003.

[18] HQ USAF/XO, "Air and Space Operations (AOC) Program Guidance," 2003; available from <https://afc2isrc.af.mil/toolset/Protected/home.asp>; Internet; accessed 24 November 2003.

[19] Anthony Youtzy <Tony.Youtzy@langley.af.mil>, "Aerospace Operations Center Weapon System: System Training Plan (Draft)," electronic mail message to Joseph Justice <smokin.justice@us.army.mil>, 25 November 2003.

[20] Department of the Air Force, *Classifying Military Personnel*, Air Force Instruction 36-2101, (Washington, D.C., U.S. Department of the Air Force, 30 April 2001), 22.

[21] Department of the Air Force, *Officer Classification*, Air Force Manual 36-2105, (Washington, D.C., U.S. Department of the Air Force, 30 April 2003), 385.

[22] Department of the Air Force, *Enlisted Classification*. Air Force Manual 36-2108, (Washington, D.C., U.S. Department of the Air Force, 30 October 2002), 572.

[23] Headquarters Air Combat Command, *Air and Space Operations Center*, Air Force Operational Tactics, Techniques, and Procedures 2-3.2, (Langley AFB, Va., Headquarters Air Combat Command, 25 October 2002), 2.

[24] Anthony Youtzy <Tony.Youtzy@langley.af.mil>, "AOC Weapons STATREP," electronic mail message to Joseph Justice <smokin.justice@us.army.mil>, 25 November 2003.

[25] AEFC Fact Sheet, "Air Force Air and Space Expeditionary Force Center," available from <https://www2.acc.af.mil/library/factsheets/aefc.html>; Internet; accessed 25 November 2003.

[26] Headquarters Air Combat Command, *Concept of Operations for Aerospace Operations Center (AOC)*, (Langley AFB, Va., Headquarters Air Combat Command, 9 March 2001), 25.

[27] Department of the Air Force, *Command and Control*. Air Force Doctrine Document 2-8, (Washington, D.C., U.S. Department of the Air Force, 16 February 2001), 45.

[28] Ibid., Youtzy, 5.

[29] Headquarters US Air Force, "AOC Weapon System Status and Roadmap," briefing slides at the Air and Space Operations Center General Officer Steering Group, Langley AFB, Virginia, 19 September 2002, slide 13.

[30] Headquarters Air Combat Command, *Concept of Operations for Aerospace Operations Center (AOC),* (Langley AFB, Va., Headquarters Air Combat Command, 9 March 2001), 27.

[31] Ibid., 28.

[32] Congress, Senate, Committee on Armed Services, *Active and Reserve Military and Civilian Personnel*, 108th Cong., 2d sess., 11 March 2003, 12.

[33] Byron Edge, AFC2ISR, telephone interview by author, 29 January 2004.

BIBLIOGRAPHY

AEFC Fact Sheet. "Air Force Air and Space Expeditionary Force Center." Available from <https://www2.acc.af.mil/library/factsheets/aefc.html>. Internet. Accessed 25 November 2003.

Bush, George W. *The National Security Strategy of the United States of America*. Washington, D. C.: The White House, September 2002.

Clodfelter, Mark. *The Limits of Air Power: The American Bombing of North Vietnam* . New York, NY, The Free Press, 1989.

Commander, Headquarters Air Force Doctrine Center. "Doctrine Watch #19: The COMAFFOR…Commander of Air Force Forces." 13 December 2002. Available from <https://afdc.maxwell.af.mil\doctrine\DoctrineWatch19.htm >. Internet. Accessed 11 November 2003.

Edge, Byron. AFC2ISR. Telephone interview by author, 29 January 2004, Carlisle, PA.

Headquarters Air Combat Command. *Air and Space Operations Center*. Air Force Operational Tactics, Techniques, and Procedures 2-3.2. Langley AFB, Va., Headquarters Air Combat Command, 25 October 2002.

_____. *Concept of Operations for Aerospace Operations Center (AOC)*. Langley AFB, Va., Headquarters Air Combat Command, 9 March 2001.

HQ USAF/XO. "Air and Space Operations (AOC) Program Guidance." 2003. Available from <https://afc2isrc.af.mil/toolset/Protected/home.asp>. Internet. Accessed 24 November 2003.

Mark, Eduard. *Aerial Interdiction in Three Wars*. Washington, D.C.: Center for Air Force History, 1994.

Murray, Williamson. *Air War in the Persian Gulf.* Baltimore, Md.: The Nautical & Aviation Publishing Company of America, 1995.

Sink, J. Taylor. *Rethinking the Air Operations Center: Air Force Command and Control in Conventional War*. Maxwell AFB, AL, Air University, September 1994.

U.S. Congress. Senate. Committee on Armed Services. *Active and Reserve Military and Civilian Personnel*. 108th Cong., 2d sess., 11 March 2003.

U.S. Department of Defense. *Quadrennial Defense Review Report*. Washington, D.C.: U.S. Department of Defense, 30 September 2001.

U.S. Department of the Air Force. "AOC Weapon System Status and Roadmap." Briefing slides at the Air and Space Operations Center General Officer Steering Group. Langley AFB, Virginia. 19 September 2002.

_____. *Air Force Basic Doctrine*. Air Force Doctrine Document 1. Washington, D.C., U.S. Department of the Air Force, September 1997.

_____. *Classifying Military Personnel*. Air Force Instruction 36-2101. Washington, D.C., U.S. Department of the Air Force, 30 April 2001.

_____. *Command and Control*. Air Force Doctrine Document 2-8. Washington, D.C., U.S. Department of the Air Force, 16 February 2001.

_____. *Enlisted Classification*. Air Force Manual 36-2108. (Washington, D.C., U.S. Department of the Air Force, 30 October 2002.

_____. *Officer Classification*. Air Force Manual 36-2105. Washington, D.C., U.S. Department of the Air Force, 30 April 2003.

_____. *Organization and Employment of Aerospace Power*, Air Force Doctrine Document 2. Washington, D.C., U.S. Department of the Air Force, 17 February 2000.

_____. *The USAF Transformation Flight Plan FY03-07*. Washington, D.C., U.S. Department of the Air Force, September 2002.

_____. *Command and Control*, Air Force Doctrine Document 2-8 Washington, D.C., U.S. Department of the Air Force, 16 February 2001.

U.S. Department of the Army. *Command and Employment of Air Power.* Army Field Manual 100-20. Washington, D.C., U.S. Department of the Army, 1943.

Youtzy, Anthony <Tony.Youtzy@langley.af.mil>. "Aerospace Operations Center Weapon System: System Training Plan (Draft)." Electronic mail message to Joseph Justice smokin.justice@us.army.mil. 25 November 2003.

_____. "AOC Weapons STATREP." Electronic mail message to Joseph Justice <smokin.justice@us.army.mil>. 25 November 2003.